WaterRight®

The Right Water for Life

Installation Instructions & Owner's Manual

Impression Series® *and* Impression Plus Series®

Water Filters

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PREINSTALLATION INSTRUCTIONS FOR DEALERS:

The manufacturer has preset the water treatment unit's sequence of cycles, cycle times, salt dose, exchange capacity and salt dose refill time.

The dealer *should read this page and guide the installer regarding hardness, day override, and time of regeneration, before installation.*

For the installer, the following must be used:

- Program Installer Settings: Hardness, Day Override (preset to 12 days), and Time of Regeneration (preset to 2 a.m., with brine tank refill to occur four hours prior; see Operating Displays and Instructions for more details)
- Read Normal Operating Displays
- Set Time of Day
- Read Power Loss & Error Display

For the homeowner, please read operating displays and instructions.

BYPASS VALVE:

The bypass valve is typically used to isolate the control valve from the plumbing system's water pressure in order to perform control valve repairs or maintenance. The 1" full flow bypass valve incorporates four positions, including a diagnostic position that allows a service technician to have pressure to test a system while providing untreated bypass water to the building. Be sure to install bypass valve onto main control valve, before beginning plumbing. Or, make provisions in the plumbing system for a bypass. The bypass body and rotors are glass-filled Noryl® and the nuts and caps are glass-filled polypropylene. All seals are self-lubricating EPDM to help prevent valve seizing after long periods of non-use. Internal "O" Rings can easily be replaced if service is required.

The bypass consists of two interchangeable plug valves that are operated independently by red arrow shaped handles. The handles identify the direction of flow. The plug valves enable the bypass valve to operate in four positions.

1. ***NORMAL OPERATION POSITION:*** The inlet and outlet handles point in the direction of flow indicated by the engraved arrows on the control valve. Water flows through the control valve for normal operation of a water filter. During the regeneration cycle this position provides regeneration water to the unit, while also providing untreated water to the distribution system ***(Fig. 1)***.

2. ***BYPASS POSITION:*** The inlet and outlet handles point to the center of the bypass. The system is isolated from the water pressure in the plumbing system. Untreated water is supplied to the building ***(Fig. 2)***.

3. ***DIAGNOSTIC POSITION:*** The inlet handle points toward the control valve and the outlet handle points to the center of bypass valve. Untreated supply water is allowed to flow to the system and to the building, while not allowing water to exit from the system to the building (***Fig. 3)***. This allows the service technician to draw brine and perform other tests without the test water going to the building.

   NOTE: The system must be rinsed before returning the bypass valve to the normal position.

4. ***SHUT OFF POSITION:*** The inlet handle points to the center of the bypass valve and the outlet handle points away from the control valve. The water is shut off to the building. The water treatment system will depressurize upon opening a tap in the building. A negative pressure in the building combined with the filter being in regeneration could cause a siphoning of brine into the building. If water is available on the outlet side of the filter, it is an indication of water bypassing the system ***(Fig. 4)*** (i.e. a plumbing cross-connection somewhere in the building).

NORMAL OPERATION POSITION

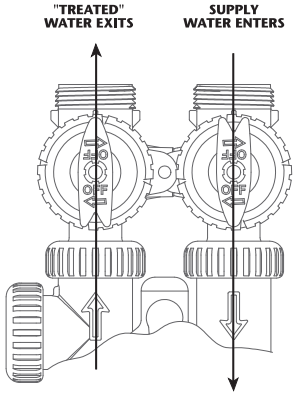


Figure 1

BYPASS POSITION

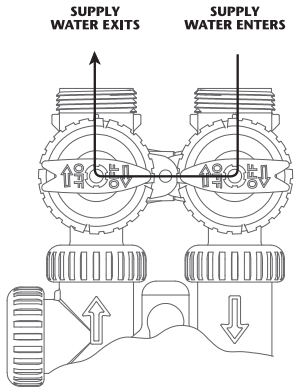


Figure 2

DIAGNOSTIC POSITION

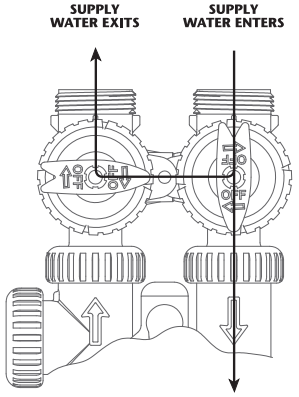


Figure 3

SHUT OFF POSITION

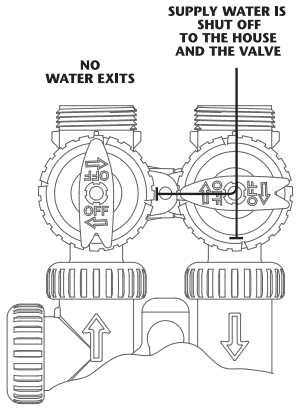


Figure 4

INSTALLATION:

GENERAL INSTALLATION & SERVICE WARNINGS

The control valve, fittings and/or bypass are designed to accommodate minor plumbing misalignments. There is a small amount of "give" to properly connect the piping, but the water filter is not designed to support the weight of the plumbing.

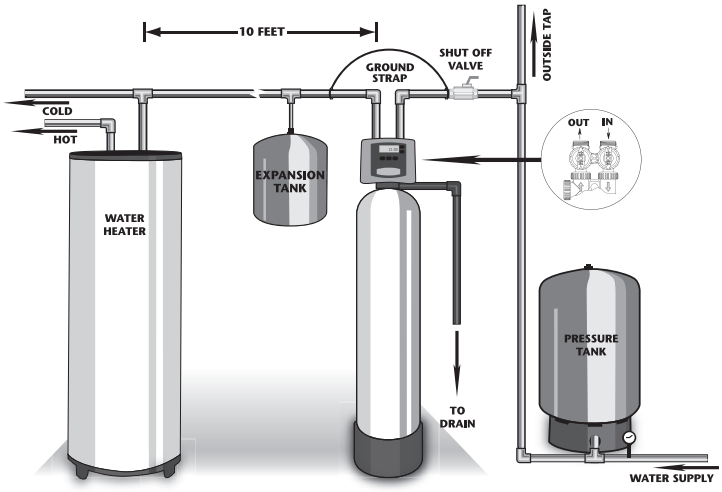
Do not use Vaseline, oils, other hydrocarbon lubricants or spray silicone anywhere. A silicone lubricant may be used on black "O" Rings, but is not necessary. *Avoid any type of lubricants, including silicone, on red or clear lip seals.*

Do not use pipe dope or other sealants on threads. Teflon® tape must be used on the threads of the 1" NPT inlet and and outlet, the brine line connection at the control valve, and on the threads for the drain line connection. Teflon® tape is not used on the nut connections or caps because "O" Ring seals are used. The nuts and caps are designed to be unscrewed or tightened by hand or with the special plastic Service Wrench, #CV3193-01. If necessary, pliers can be used to unscrew the nut or cap. Do not use a pipe wrench to tighten nuts or caps. *Do not place screwdriver in slots on caps and/or tap with a hammer.*

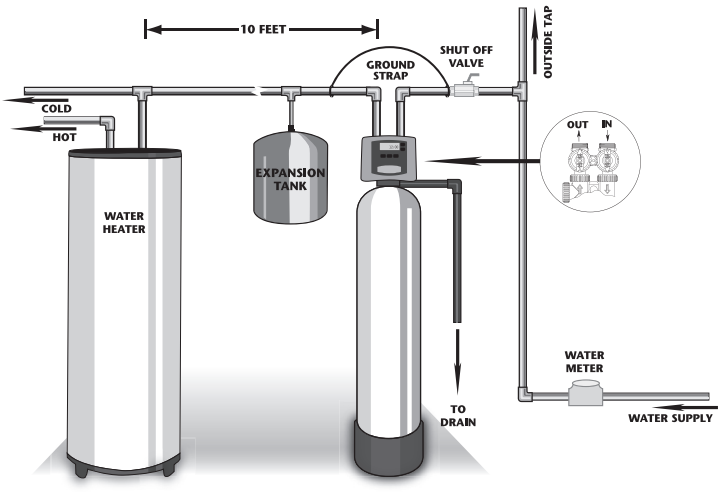
SITE REQUIREMENTS

- water pressure – 25-100 psi
- water temperature – 33-100°F (0.5-37.7°C)
- electrical – 115/120V, 60Hz uninterrupted outlet
- the tank should be on a firm level surface
- current draw is 0.5 amperes
- the plug-in transformer is for dry locations only

WELL WATER INSTALLATION



MUNICIPAL INSTALLATION



1. The distance between the drain and the water filter should be as short as possible.

2. Do not install any water filter with less than 10 feet of piping between its outlet and the inlet of a water heater. For an IMS or IMB filter, an expansion tank on the outlet side of the system is recommended.

CAUTION: **To protect the unit in the event of a hot water heater backup, the manufacturer recommends the use of an expansion tank on the outlet side of the unit.**

3. Do not locate unit where it or its connections (including the drain and overflow lines) will ever be subjected to room temperatures under 33° F.

6. ***INLET/OUTLET PLUMBING:*** Be sure to install Bypass Valve onto main control valve before beginning plumbing. Make provisions to bypass outside hydrant and cold hard water lines at this time. Install an inlet shutoff valve and plumb to the unit's bypass valve inlet located at the right rear as you face the unit. There are a variety of installation fittings available. They are listed under Installation Fitting Assemblies, page 22-23. When assembling the installation fitting package (inlet and outlet), connect the fitting to the plumbing system first and then attach the nut, split ring and "O" Ring. Heat from soldering or solvent cements may damage the nut, split ring or "O" Ring. Solder joints should be cool and solvent cements should be set before installing the nut, split ring and "O" Ring. Avoid getting solder flux, primer, and solvent cement on any part of the "O" Rings, split rings, bypass valve or control valve. If the building's electrical system is grounded to the plumbing, install a copper grounding strap from the inlet to the outlet pipe. Plumbing must be done in accordance with all applicable local codes.

7. ***DRAIN LINE:*** First, be sure that the drain can handle the backwash rate of the system. Solder joints near the drain must be done prior to connecting the drain line flow control fitting. Leave at least 6" between the drain line flow control fitting and solder joints. Failure to do this could cause interior damage to the flow control. Install a 1/2" I.D. flexible plastic tube to the Drain Line Assembly or discard the tubing nut and use the 3/4" NPT fitting for rigid pipe (recommended). If the backwash rate is greater than 7 gpm, use a 3/4" drain line. Where the drain line is elevated but empties into a drain below the level of the control valve, form a 7" loop at the discharge end of the line so that the bottom of the loop is level with the drain connection on the control valve. This will provide an adequate anti-siphon trap. Piping the drain line overhead <10 ft is normally not a problem. Be sure adequate pressure is available (40-60 psi is recommended). Where the drain empties into an overhead sewer line, a sink-type trap must be used. Run drain tube to its discharge point in accordance with plumbing codes. Pay special attention to codes for air gaps and anti-siphon devices.

   Note: The drain connection for an IMS sulfur filter or an IMB iron filter must be secured to the floor or wall where unit discharges to drain. Because high volumes of air and water discharge during backwash, the drain line can move violently. Rigid pipe should be used.

CAUTION: **Never insert a drain line into a drain, sewer line, or trap. Always allow an air gap between the drain line and the wastewater to prevent the possibility of sewage being back-siphoned into the filter.**

IMS/IMB INSTALLATION INSTRUCTIONS:

Special precautions must be made when connecting the drain line. Hard piping is recommended. During backwash, high volumes of water and air escape rapidly, causing a flexible drain line to whip and thrash. Please attach drain line securely with rigid piping.

Two check valves are supplied with this shipment. One is a 3/8" John Guest push-in type with screen and the other is a 1" stainless female threaded check valve.

The 3/8" John Guest check will have a small piece of gray tubing inserted in it. Insert gray tubing into the brine elbow on the control valve ***(see Drawing A)***.

The 1" stainless steel female check valve should be installed on the inlet side of the control valve so the air drawn in cannot escape through the inlet ***(see Drawing B for flow direction)***.

Note: Plumbing codes may require an expansion tank after water treatment device and water heater for thermal expansion control.

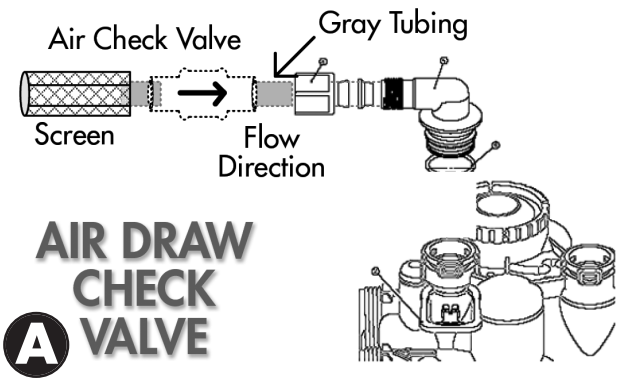
After installation is complete, fill unit in the backwash like usual. Let water drain slowly, increasing flow until clear.

***CAUTION:* Media is dry and filling with water too quickly in backwash will result in media plugging the drain and valve assembly.**

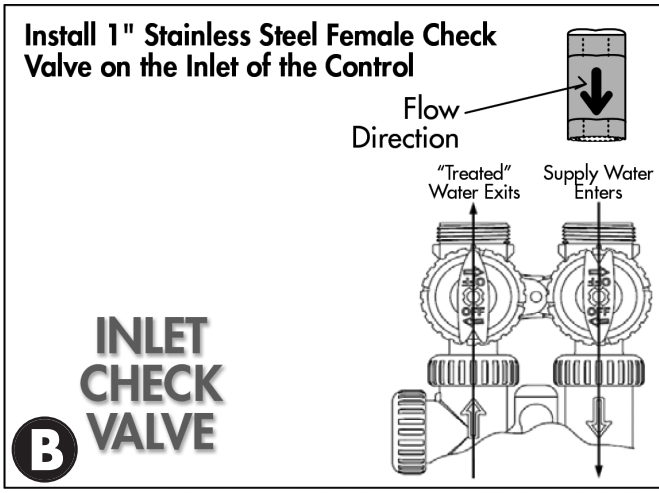
Place unit in the next cycle which is down brine and let the unit finish on its own. This will allow the unit to draw in the air so it can function properly.

Note: Impression Series® sulfur units may require additional disinfection, especially in warm weather climates. Please contact dealer for more information.

The 3/8" Check Will Have a Screen and Two Small Pieces of Gray Tubing Attached



Install 1" Stainless Steel Female Check Valve on the Inlet of the Control



PROGRAMMING PROCEDURES:

1. Set time of day:

Time of day should only need to be set after extended power outages or when daylight saving time begins or ends. If an extended power outage occurs, the time of day will flash on and off indicating that the time should be reset.

STEP 1 – Press ***SET CLOCK***.
STEP 2 – ***CURRENT TIME (HOUR):*** Set the hour of the day using **+** or **–** buttons. AM/PM toggles after 12. Press ***NEXT*** to go to step 3.
STEP 3 – ***CURRENT TIME (MINUTES):*** Set the minutes using **+** or **–** buttons. If it is desired to back up to the previous step press ***REGEN*** button once. Pressing ***NEXT*** will exit ***SET CLOCK*** and return to the general operating display (page 10).

2. Programming:

NOTE: The manufacturer has preset the unit so that the gallons between regenerations will be automatically calculated after the hardness is entered.

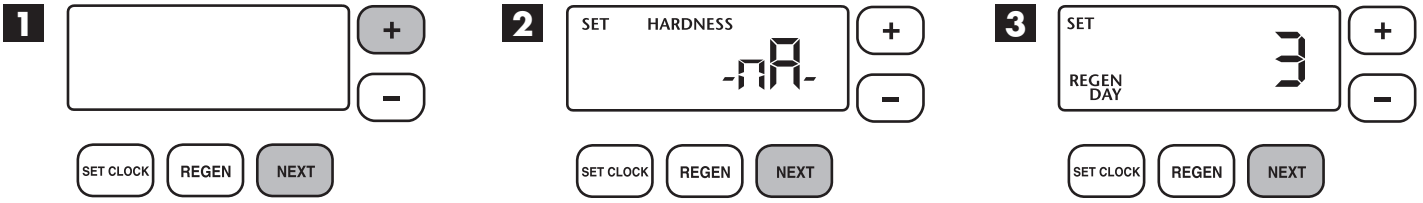
STEP 1 – Press ***NEXT*** and **+** simultaneously for 3 seconds.

STEP 2 – ***HARDNESS:*** This display will show "–nA– (not available)" if "FILTER" is selected. Press ***NEXT*** to go to step 3. Press ***REGEN*** to exit.

STEP 3 – ***DAY OVERRIDE:*** The manufacturer has factory set 3 DAYS as the default. This is the maximum number of days between regenerations. If this is set to "OFF", regeneration initiation is based solely on gallons used. If any number is set (allowable range from 1 to 28), a regeneration initiation will be called for on that day even if a sufficient number of gallons were not used to call for a regeneration.
Set Day Override using **+** or **–** buttons (3 is recommended):

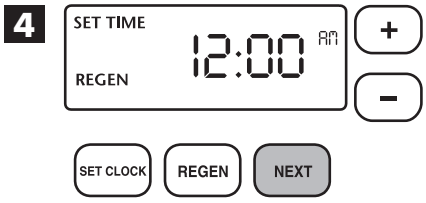
- set number of days between regeneration (1 to 28); or
- set to "OFF".

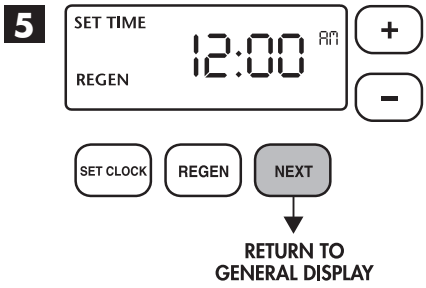
Press ***NEXT*** to go to step 4. Press ***REGEN*** if you need to return to the previous step.



STEP 4 – ***REGENERATION HOUR:*** The manufacturer has factory set 12:00 A.M. as the default. This is the hour of day for regeneration and can be reset by using + or − buttons. "AM/PM" toggles after 12. The default time is 12:00 a.m. (recommended for a normal household). Press ***NEXT*** to go to step 5. Press ***REGEN*** if you need to return to the previous step.

STEP 5 – ***REGENERATION MINUTES:*** Set the minutes using + or − buttons. Press ***NEXT*** to exit installer programming. Press ***REGEN*** if you need to return to the previous step. To initiate an immediate manual regeneration, press and hold the ***REGEN*** button for three seconds. The system will begin to regenerate immediately. The control may be manually stepped through the regeneration cycles by pressing ***REGEN***.





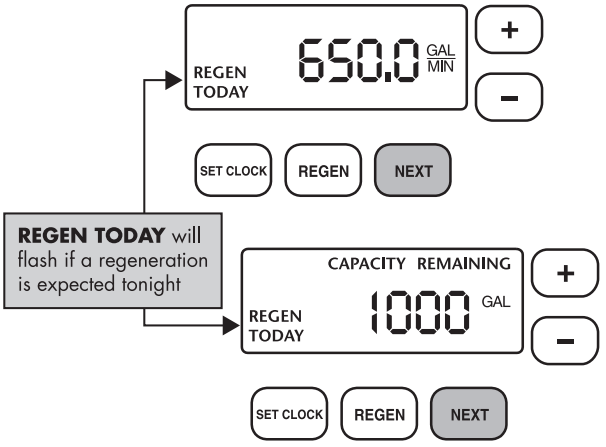
OPERATING DISPLAYS AND INSTRUCTIONS:

1. ***GENERAL OPERATION:*** When the system is operating, one of three displays may be shown. Pressing ***NEXT*** will alternate between the displays. One of the displays is always the current time of day. The second display shows the current treated water flow rate through the system in Gallons Per Minute. The third display is capacity remaining. Capacity remaining is the gallons that will be treated before the system goes through a regeneration cycle. The user can scroll between the displays as desired.

   If the system has called for a regeneration that will occur at the preset time of regeneration, the words "REGEN TODAY" will appear on the display.

   If a water meter is installed, the word "Softening" or "Filtering" flashes on the display when water is being treated (i.e. water is flowing through the system).

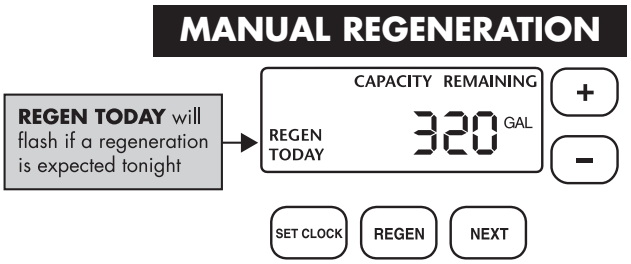
GENERAL OPERATION DISPLAYS



2. ***REGENERATION MODE:*** Typically a system is set to regenerate at a time of no water use. If there is a demand for water when the system is regenerating, untreated water will be delivered. When the system begins to regenerate, the display will change to include information about the step of the regeneration process and the time remaining for that step to be completed. The system runs through the steps automatically and will reset itself to provide treated water when the regeneration has been completed.

REGENERATION MODE

3. ***MANUAL REGENERATION:*** Sometimes there is a need to regenerate before the control valve calls for it. This may be needed if a period of heavy water use is anticipated or when the system has been operated without salt.

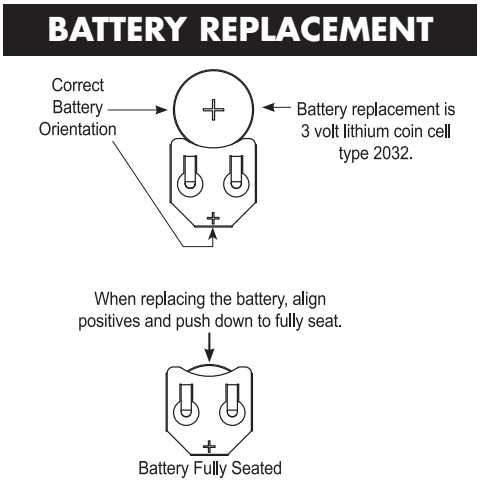


- To initiate a manual regeneration *at the next preset regeneration time,* press and release ***REGEN***. The words "REGEN TODAY" will flash on the display to indicate that the system will regenerate at the next regeneration time (set in Programming, steps 4 and 5). *If you pressed the* ***REGEN*** *button in error, pressing the button again will cancel the command.*

- To initiate a manual regeneration *immediately,* press and hold the ***REGEN*** button for three seconds. The system will begin to regenerate immediately. ***This command cannot be cancelled.***

Once a manual regeneration is initiated, the unit will go into the BACKWASH position and subsequent positions thereafter (see Start Up Instructions for regeneration sequence), the water filter will deliver water, but it will be untreated.

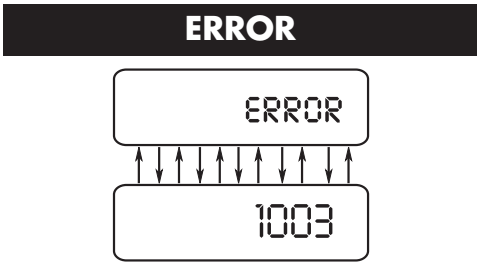
4. ***POWER LOSS AND BATTERY REPLACEMENT:***
The AC transformer comes with a 15 foot power cord and is designed for use with the control valve; the transformer should only be used in a dry location.


BATTERY REPLACEMENT
Correct Battery Orientation
Battery replacement is 3 volt lithium coin cell type 2032.
When replacing the battery, align positives and push down to fully seat.
Battery Fully Seated

In the event of a power outage that is less than 24 hours, the control valve will remember all settings and time of day. After 24 hours, the only item that needs to be reset is the time of day and will be indicated by the time of day flashing. All other settings are permanently stored in the nonvolatile memory.

If a power loss occurs that *is less than 24 hours and the time of day flashes,* this indicates that the battery is depleted. The time of day should be reset and the non-rechargeable battery should be replaced. The battery is a 3 Volt Lithium Coin Cell type 2032 and is readily available at most stores. To access battery location, remove front cover (*see diagram on page 14 for battery location).*

5. ***ERROR MESSAGE:*** If the word "ERROR" and a number are alternately flashing on the display record the number and contact the dealer for help. This indicates that the control valve was not able to function properly.



START-UP INSTRUCTIONS:

- After installation is complete, rotate bypass handles to bypass mode ***(see Fig.2 on page 4)***.
- Turn on water and check for leaks.
- Fully open a cold water faucet — preferably a laundry sink or bathtub without an aerator.
- Allow water to run until clear to rid pipes of debris which may have occurred during installation.

System regeneration sequence is in the following order. Some sequence differences may be noticed depending upon local conditions. (If it is desired to change this sequence, please refer to the Dealer Manual or contact the manufacturer.)

Sequencing for Various Filters (Medias):

Acid Neutralizer	**Optional Acid Neutralizing Sequencing**			**Impression Sulfur & Iron Air Systems**
1. Backwash	1. Backwash	4. Backwash	7. Return to service	1. Backwash
2. Rinse	2. Filtering	5. Filtering		2. Air draw
3. Return to service	3. Rapid rinse	6. Rapid rinse		3. Return to service

The system is now ready for filling with water and for testing.

1. Place the bypass valve into the bypass mode ***(Fig. 2 on page 4)***.
2. Press and hold the ***REGEN*** button until the motor starts. Release button. Put the valve into "BACKWASH" position. Unplug the transformer so that the valve will not cycle to the next position. Open the inlet handle of the bypass valve very slightly allowing water to fill the tank slowly in order to expel air.

CAUTION: **If water flows too rapidly, there will be a loss of media to the drain. Some medias such as carbon and Filter Z should not be backwashed immediately for extended periods of time. These medias need to "soak" in the water for a 24-hour period prior to full backwash conditions.**

3. When the water is flowing steadily to the drain without the presence of air, slowly open the inlet valve. Restore power and momentarily press the ***REGEN*** button to advance the control to the "RINSE" position.
4. With the bypass still in the diagnostic mode ***(Fig. 3 on page 4)***, there should be a rapid flow to the drain. Unplug the transformer to keep the valve in the "RINSE" position. Allow water to run until steady, clear and without air.

   Note: Carbon filters, Filter Z filters and Impression Air Systems may require a longer rinse period to rinse the media of excess particles. Some "color throw" can be expected. Run water until clear.

5. Restore power, press ***REGEN*** button in sequence until display returns to "TIME." Place bypass valve in the normal operating mode ***(Fig. 1 on page 4)*** by opening the outlet bypass handle.
6. Go to laundry tub or bathtub faucet, preferable a faucet without an aerator, and turn on cold water. Let the water run. Note the color of water coming from faucet. If discolored, let water run until clear. If severely discolored, place unit into rinse position (step 4) and run water to the system's drain until clear.

   Note: At no time should there by large particles of media noticed at faucet or laundry tub. If this is seen, immediately shut off water and bypass system, as this could be an indication of a distributor failure. Contact manufacturer or distributor for assistance.

7. **For IMS and IMB filters,** place unit into regeneration again and allow to complete cycle. Upon completion, unit will have an air charge and will delivery treated water.

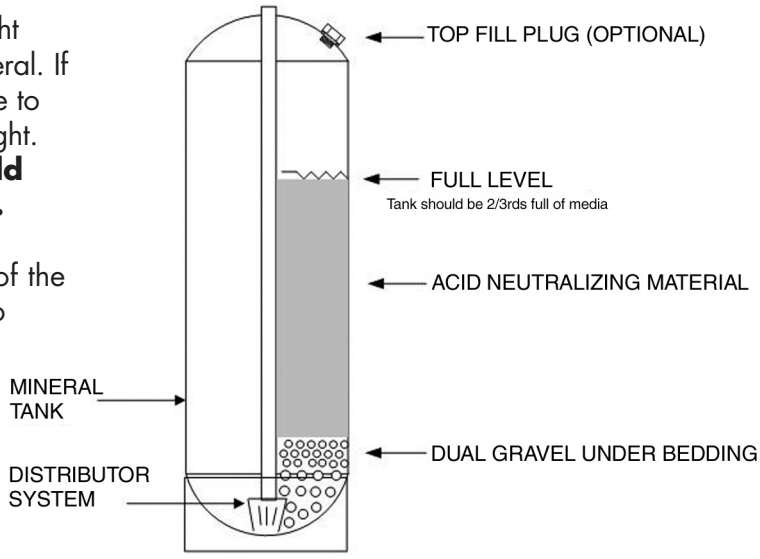
REPLACEMENT MINERAL INSTRUCTIONS FOR IMBF-ACID NEUTRALIZER:

The IMBF-Acid Neutralizer utilizes a sacrificing mineral that will need replacement every 6 to 12 months.

- Check mineral for proper height every 6 months.
- If below half-full, add mineral to the two-thirds full level. **(NEVER OVERFILL PAST TWO-THIRDS FULL.)**
- Always turn water supply off and relieve water pressure before opening unit. (See instructions stated below.)

1. Check the media height by shining a flashlight through the tank to see the height of the mineral. If the level is not seen, the top fill plug will have to be removed (if available) to measure the height. Proceed to step 2. **The media tank should only be two-thirds full *(see diagram)*.**

2. To remove top fill plug, turn off the source of the water and open a conditioned water tap to relieve the water pressure on the system. Place unit into the bypass mode. Unscrew the top fill plug. If a 1220-01 In/Out Head is used and no top fill port is available, the top plate must be removed from the In/Out Head again after pressure is released.



***CAUTION:* Never unscrew top fill plug or top plate on In/Out Head unless pressure is fully released from system. Serious injury and or flooding can occur.**

3. Siphon out some water from the tank through the dome hole. This will allow room when adding the media.

   NOTE: Screen on the CD1220-01 may be removed to siphon out water. However, screen must be in place before refilling with media.

4. Add the appropriate amount of media into top of tank. Make sure the right kind and amount of media (Calcite or Calcite/Corsex mix) is added. Fill to full level ***(see diagram)***. **Do not overfill.** Carefully screw the top fill plug or top plate (In/Out Head) back into tank. Grease "O" Ring, if necessary, and tighten.

5. Leaving controller in the bypass position, turn on water source and refer to the start-up instructions of the controller and complete the procedure.

6. Once start up is complete, please check the top fill plug for any leaking.

TROUBLESHOOTING GUIDE:

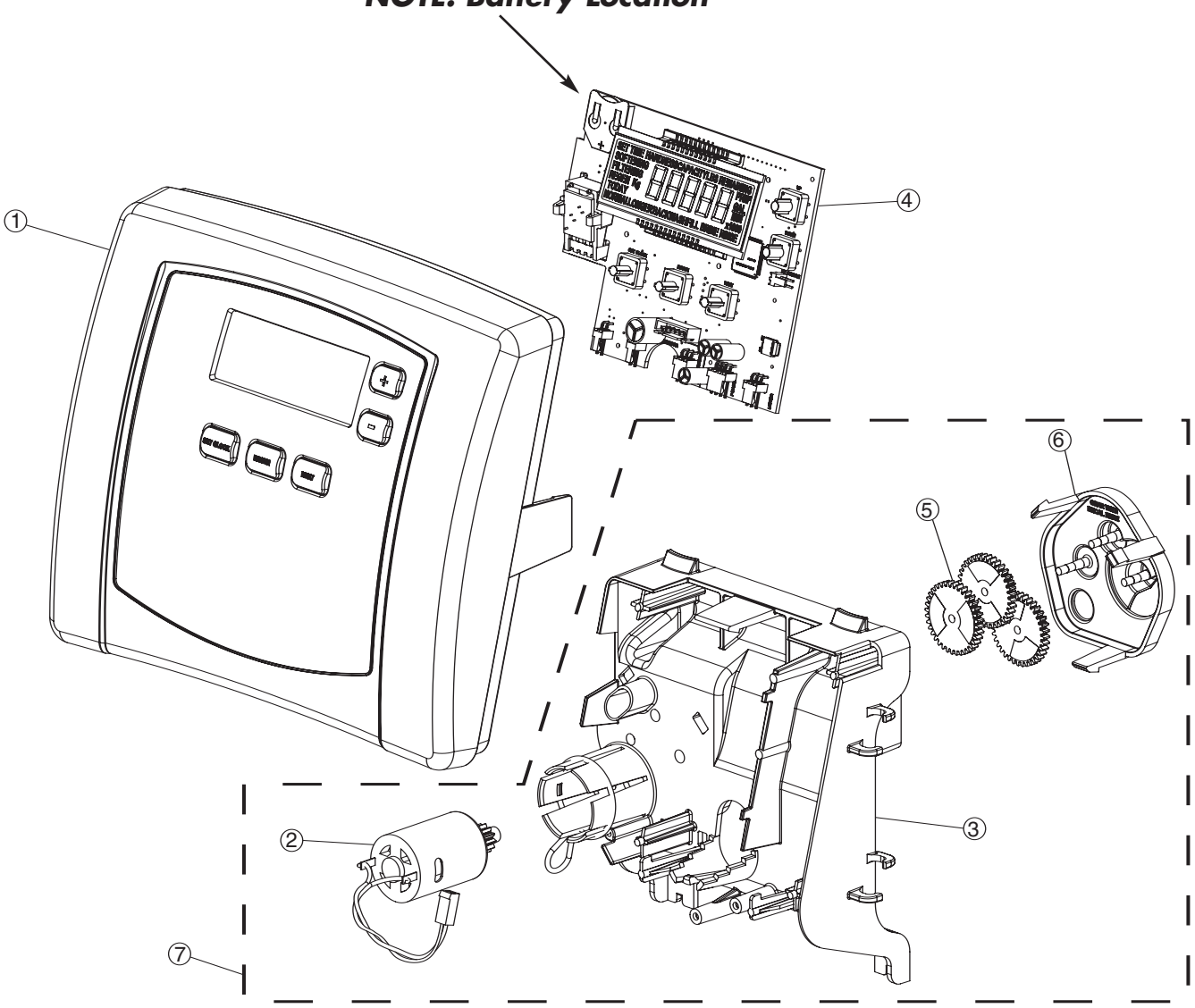
PROBLEM	CAUSE	CORRECTION
Timer does not display time of day	A. transformer unplugged	A. reconnect transformer
	B. no power at outlet	B. repair or use working outlet
	C. defective transformer	C. replace transformer
	D. defective PC board	D. replace PC board
Timer does not display correct time of day or time of day flashes	A. outlet is on a switch	A. use unswitched outlet
	B. power outage	B. reset time of day; if due to a power outage of less than 24 hours, reset time of day and replace battery (see instructions on page 9)
	C. defective PC board	C. replace PC board
No softening/ filtering display when water is flowing	A. bypass valve in bypass position	A. put bypass in service position
	B. meter cable disconnected	B. reconnect PC board
	C. restricted/stalled meter turbine	C. remove meter and check for debris
	D. defective meter	D. replace meter
	E. defective PC board	E. replace PC board
Unit regenerates at wrong time of day	A. past power outage	A. reset time of day
	B. incorrect time of day displayed	B. reset time of day
	C. time of regenerant set incorrectly	C. reset time of regeneration
	D. control set at “on 0”	D. check with regeneration time option in programming
	E. control set at “NORMAL + on 0”	E. check with regeneration time option in programming
Valve stalled in regeneration	A. motor not operating	A. replace motors
	B. no power at outlet	B. repair outlet or use working outlet
	C. defective transformer	C. replace transformer
	D. defective PC board	D. replace PC board
	E. broken drive gear or drive cap assembly	E. replace gear or drive cap assembly
	F. broken piston retainer	F. replace drive cap assembly
	G. broken main or regenerant piston	G. replace main or regenerant piston

PROBLEM	CAUSE	CORRECTION
Valve does not regenerate automatically when REGEN button is pressed	A. transformer unplugged	A. connect transformer and PC board power
	B. no power at outlet	B. restore power
	C. broken drive gear or drive cap assembly	C. replace gear or drive cap assembly
	D. defective PC board	D. replace board
Valve does not regenerate automatically but does when REGEN button is pressed	A. bypass valve not in normal operating mode	A. see bypass diagrams on page 4
	B. meter disconnected	B. reconnect to PC board
	C. obstructed meter turbine	C. clear obstruction
	D. defective meter	D. replace meter
	E. programming error	E. review programming
	F. defective PC board	F. replace board
ERROR *followed by code #*		
Error code 1001: unable to recognize start of regeneration	A. valve has just been serviced (#1001)	A. press ***NEXT*** and ***REGEN*** for 3 seconds or momentarily unplug power source from PC board
Error code 1002: unexpected stall	B. motor gears not fully engaged — motor wires broken — failed motor (#1001)	B. check motor wiring
Error code 1003: motor ran too long	C. foreign material stuck in valve (#1002)	C. check piston and spacer stack for obstruction
Error code 1004: motor ran too long	D. excessive piston resistance (#1002)	D. replace piston(s) and spacer stack assembly
Error code 1009, 2001, 4002, 4003, 4004, 4010: circuit board failure	E. piston not in home position (#1004)	E. press ***NEXT*** and ***REGEN*** or momentarily unplug PC board power
	F. center drive gear reflector dirty or damaged — missing or broken gear (#1004)	F. replace or clean drive gear(s)
TWIN ALT SYSTEMS	G. drive bracket incorrectly aligned on backplate (#1004)	G. reset drive bracket
Error code 1006: motor ran too long	H. PC board is damaged or defective (#1009, 2001, 4002, 4003, 4004, 4010)	H. replace PC board
Error code 1007: unexpected stall	I. PC board incorrectly aligned on drive bracket (#1009, 2001, 4002, 4003, 4004, 4010)	I. reset PC board onto drive bracket
If other codes appear, contact dealer.		

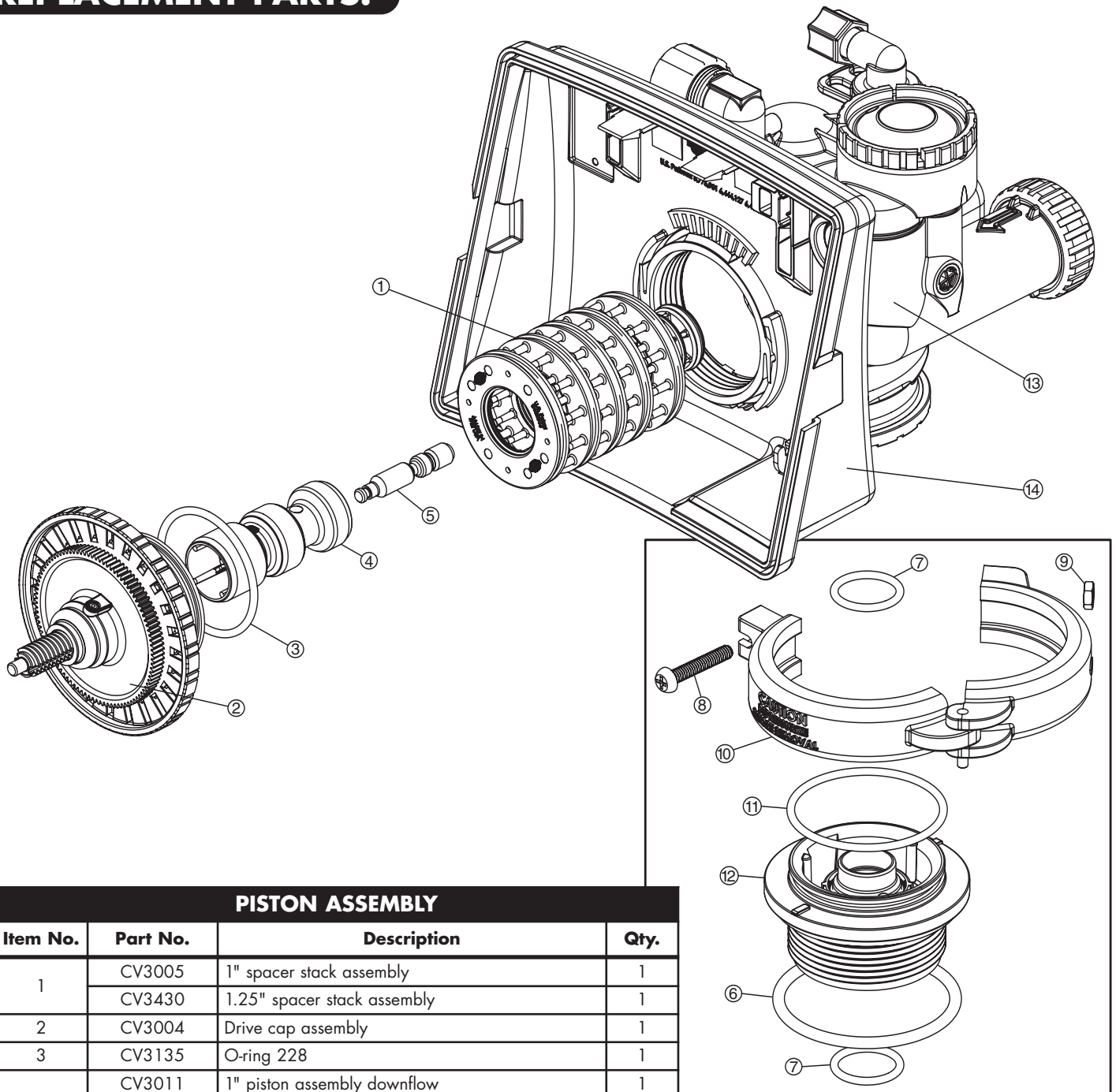
REPLACEMENT PARTS:

FRONT COVER AND DRIVE ASSEMBLY			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3540-A	Black Impression® cover	1
	CV3540-W-A	Gray Impression® cover	1
	CV3540P-A	Black Impression Plus® cover	1
	CV3540P-W-A	Gray Impression Plus® cover	1
2	CV3107-1	Motor	1
3	CV3106-1	Drive bracket & spring clip	1
4	CV3579WI	PC board, CC	1
5	CV3110	Drive gear, 12 x 36	3
6	CV3109	Drive gear cover	1
7	CV3002CC	Drive assembly, CC	-
	CV3186	Transformer, 110V-12V	1
	CV3543	***Optional*** weather cover	1

NOTE: Battery Location



REPLACEMENT PARTS:



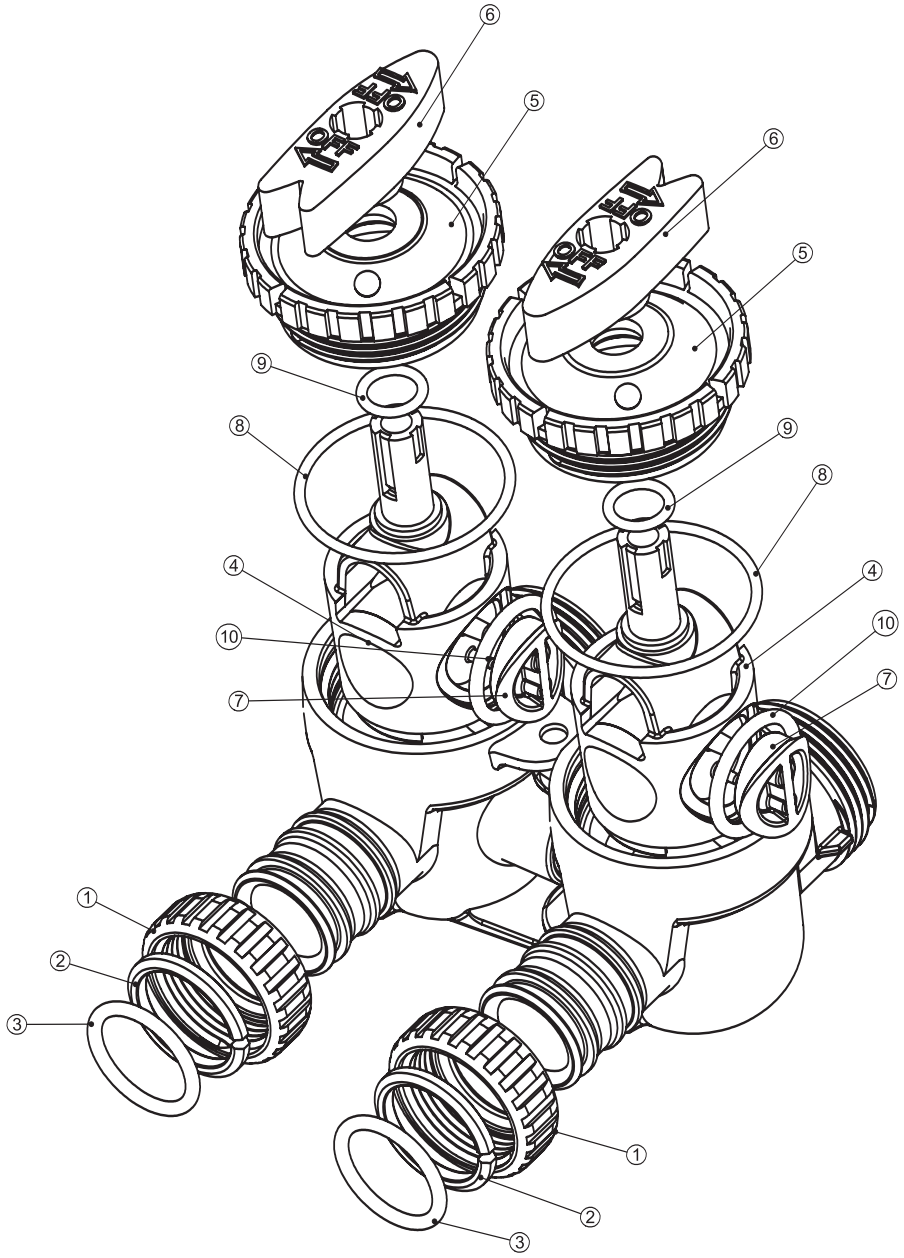
PISTON ASSEMBLY			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3005	1" spacer stack assembly	1
	CV3430	1.25" spacer stack assembly	1
2	CV3004	Drive cap assembly	1
3	CV3135	O-ring 228	1
4	CV3011	1" piston assembly downflow	1
	CV3011-01	1" piston assembly upflow	1
	CV3407	1.25" piston assembly downflow	1
5	CV3174	Regenerant piston	1
6	CV3180	O-ring 337	1
7	CV3105	O-ring 215	1
8	CV3556	Screw, 1/4-20x1-1/2 18-8SS	1
9	CCI-00318337	Nut, 1/4-20 HEX 18-8SS	1
10	CV3016	QC2 clamp assembly (includes screw & nut)	1
11	CV3452	O-ring 230	1
12	CV3015	WS1 QC2 Tank adapter assembly (includes O-rings)	1
13	CV3001	1" body assembly downflow	1
	CV3001UP	1" body assembly upflow	1
	CV3020	1.25" body assembly downflow	1
14	CV3541	Drive backplate	1

NOTE: For Impression Plus® Models only. Not available on 1¼" valve.

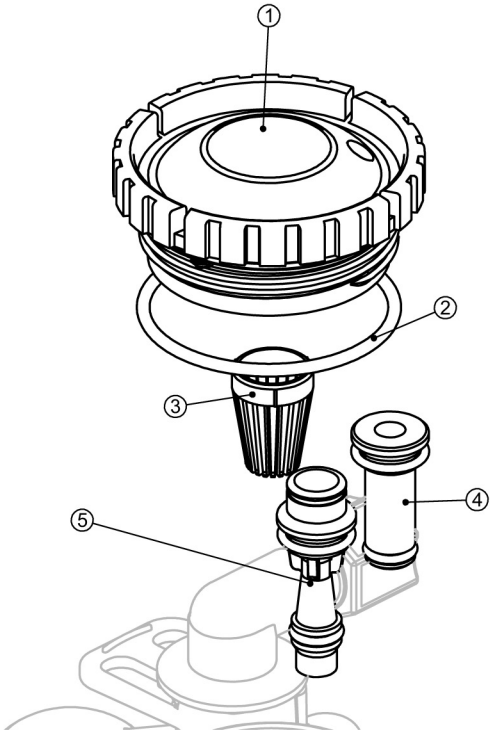
For Impression Plus® Models Only

REPLACEMENT PARTS:

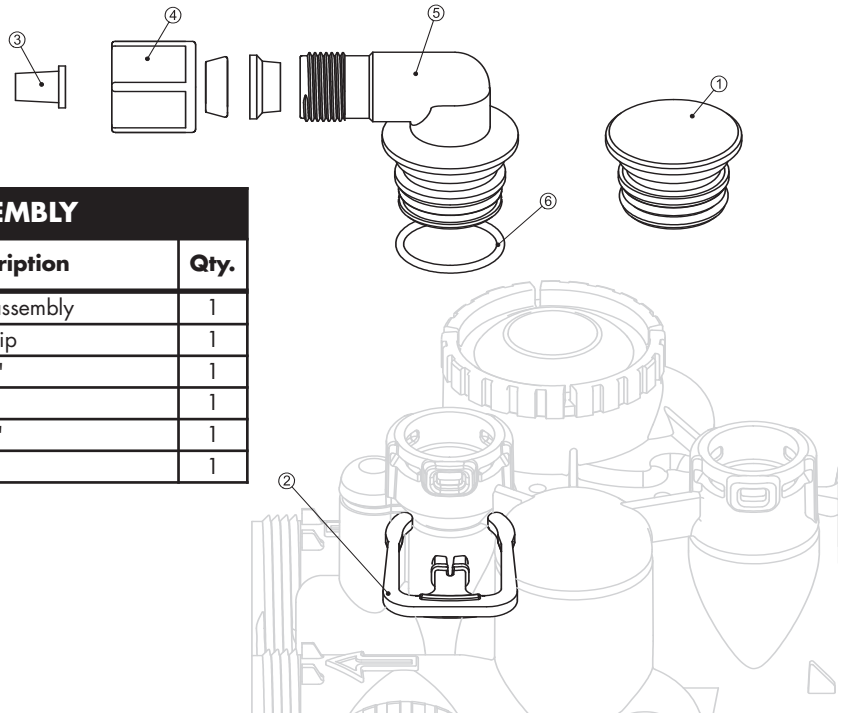
BYPASS VALVE			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3145	Bypass rotor, 1"	2
5	CV3146	Bypass cap	2
6	CV3147	Bypass handle	2
7	CV3148	Bypass rotor seal retainer	2
8	CV3152	O-ring 135	2
9	CV3155	O-ring 112	2
10	CV3156	O-ring 214	2



REPLACEMENT PARTS:



INJECTOR ASSEMBLIES			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3176	Injector cap	1
2	CV3152	O-ring 135	1
3	CV3177-01	Injector screen	1
4	CV3010-1Z	Injector assembly plug	1
5	CV3010-1A	**A** injector assembly, **BLACK**	1
	CV3010-1B	**B** injector assembly, **BROWN**	
	CV3010-1C	**C** injector assembly, **VIOLET**	
	CV3010-1D	**D** injector assembly, **RED**	
	CV3010-1E	**E** injector assembly, **WHITE**	
	CV3010-1F	**F** injector assembly, **BLUE**	
	CV3010-1G	**G** injector assembly, **YELLOW**	
	CV3010-1H	**H** injector assembly, **GREEN**	
	CV3010-1I	**I** injector assembly, **ORANGE**	
	CV3010-1J	**J** injector assembly, **LIGHT BLUE**	
	CV3010-1K	**K** injector assembly, **LIGHT GREEN**	
not shown	CV3170	O-ring 011, lower	*
not shown	CV3171	O-ring 013, upper	*
* The injector plug and the injector each use one lower and one upper o-ring			

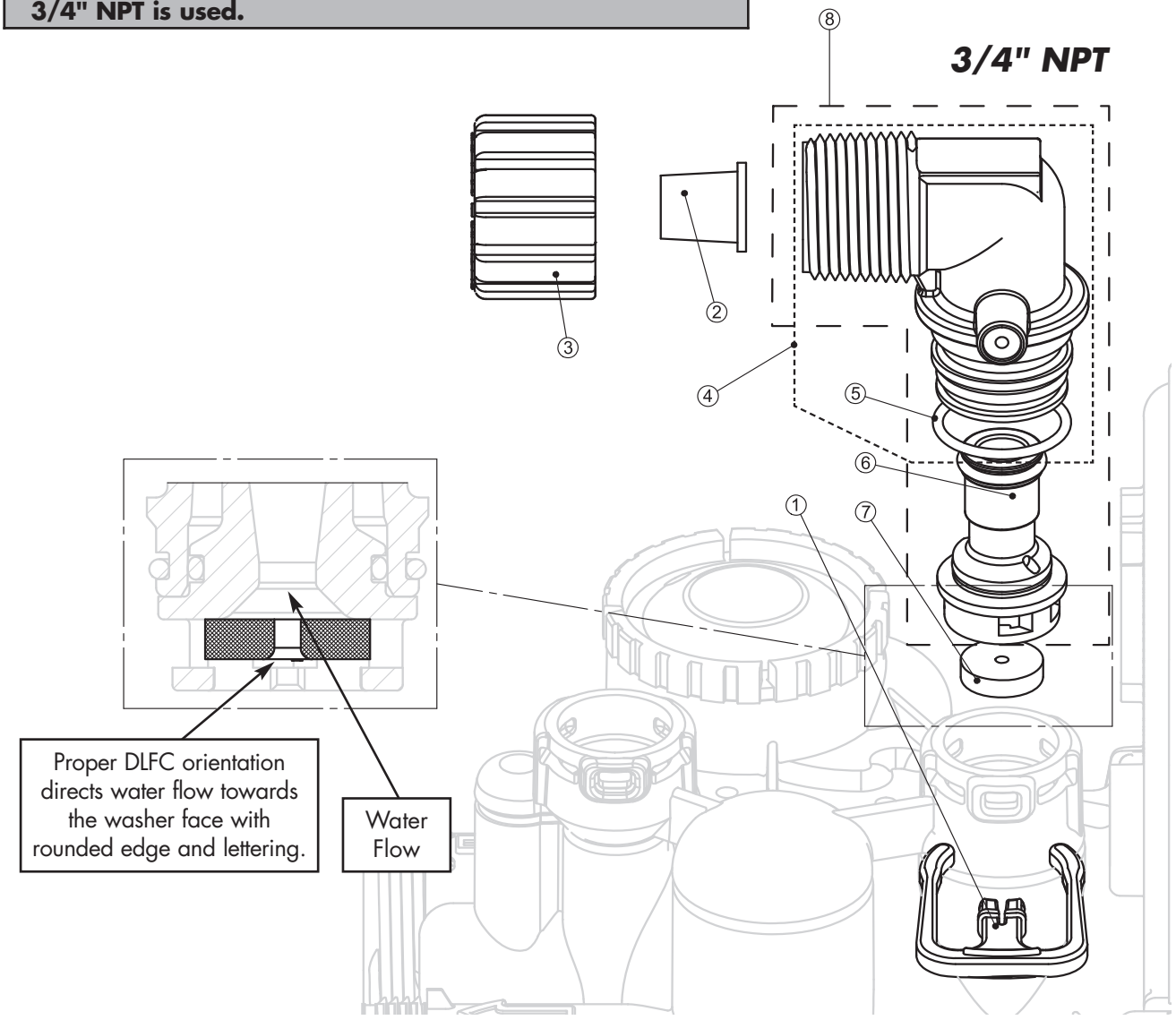


BRINE ELBOW ASSEMBLY			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3195-01	Refill port plug assembly	1
2	CH4615	Elbow locking clip	1
3	CS1197	Tube insert, 3/8"	1
4	CJCPG-6PBLK	Nut, 3/8"	1
5	CH4613	Elbow cap, 3/8"	1
6	CV3163	O-ring 019	1

REPLACEMENT PARTS:

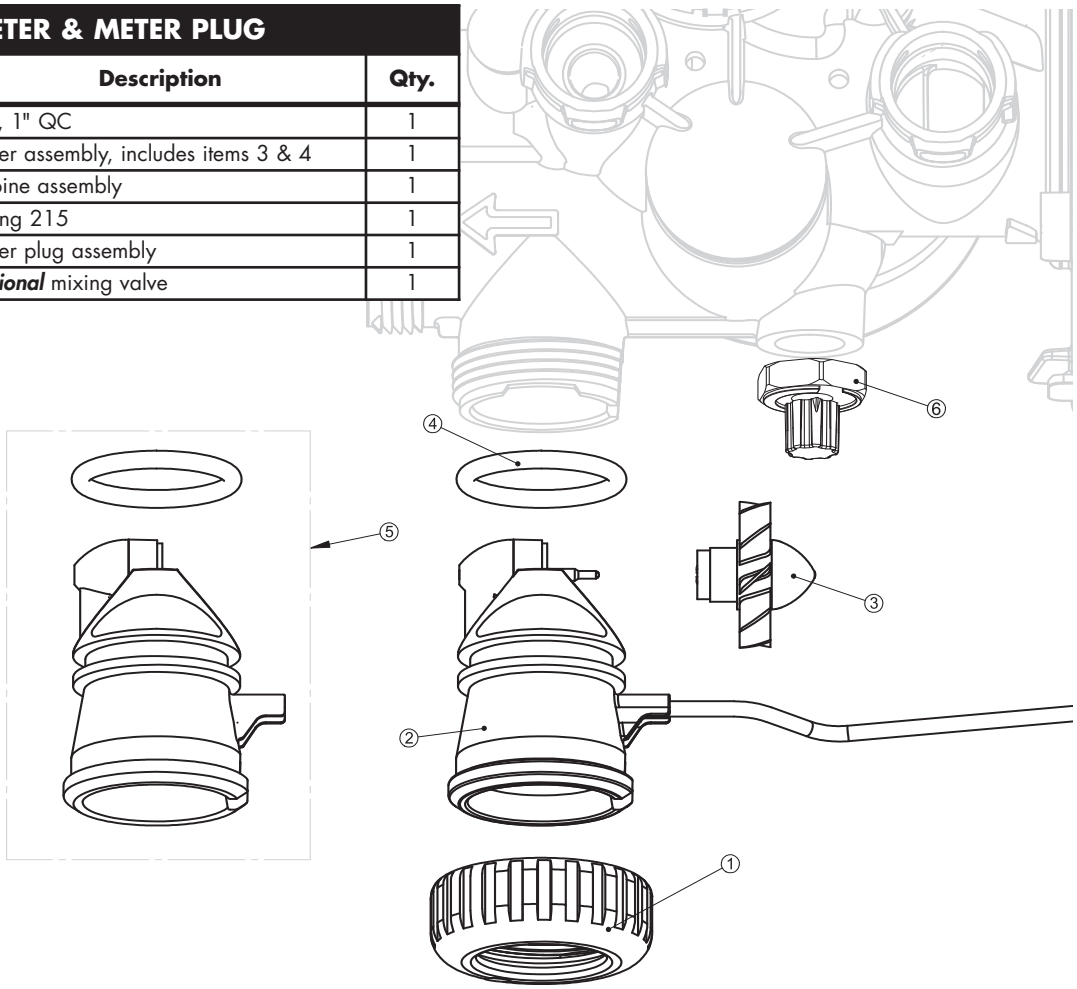
DRAIN LINE ASSEMBLY 3/4"			
Item No.	**Part No.**	**Description**	**Qty.**
1	CH4615	Elbow locking clip	1
2	CPKP10TS8-BULK	***Optional*** insert, 5/8" tube	1
3	CV3192	***Optional*** nut, 3/4" drain elbow	1
4	CV3158-01	Drain elbow, 3/4" NPT with O-ring	1
5	CV3163	O-ring 019	1
6	CV3159-01	DLFC retainer assembly	1
7	CV3162-007	0.7 DLFC for 3/4" elbow	1
	CV3162-010	1.0 DLFC for 3/4" elbow	
	CV3162-013	1.3 DLFC for 3/4" elbow	
	CV3162-017	1.7 DLFC for 3/4" elbow	
	CV3162-022	2.2 DLFC for 3/4" elbow	
	CV3162-027	2.7 DLFC for 3/4" elbow	
	CV3162-032	3.2 DLFC for 3/4" elbow	
	CV3162-042	4.2 DLFC for 3/4" elbow	
	CV3162-053	5.3 DLFC for 3/4" elbow	
8	CV3331	Drain elbow and retainer assembly	

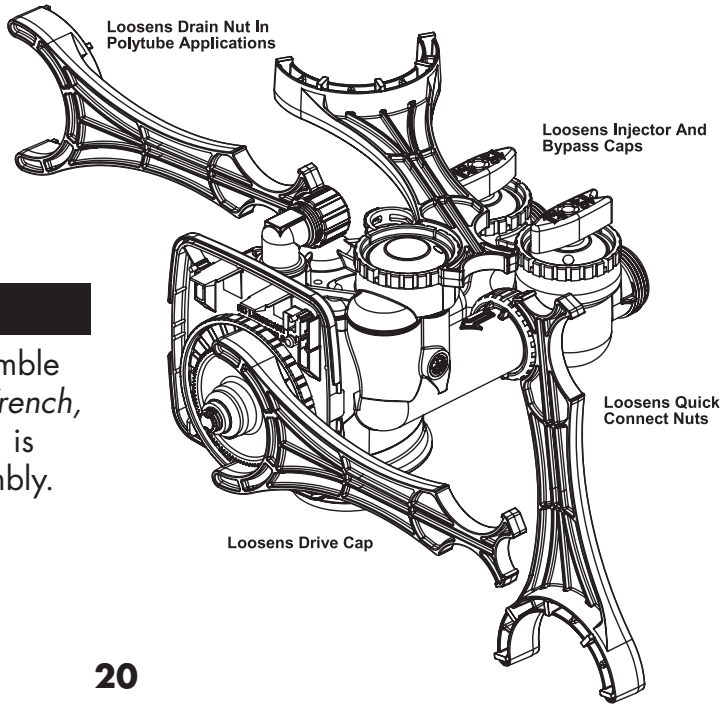
Items 2 and 3, nut and insert are only used with 1/2" I.D. by 5/8" O.D. polytubing. For other piping material, the 3/4" NPT is used.



REPLACEMENT PARTS:

WATER METER & METER PLUG			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3151	Nut, 1" QC	1
2	CV3003	Meter assembly, includes items 3 & 4	1
3	CV3118-01	Turbine assembly	1
4	CV3105	O-ring 215	1
5	CV3003-01	Meter plug assembly	1
6	CV3013	***Optional*** mixing valve	1

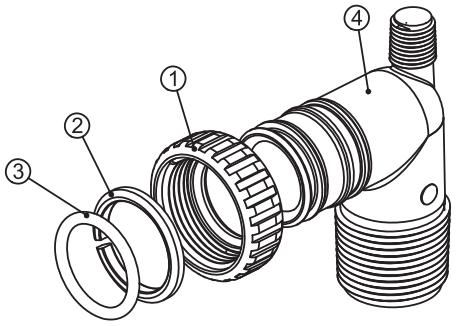



Loosens Drain Nut In Polytube Applications
Loosens Injector And Bypass Caps
Loosens Quick Connect Nuts
Loosens Drive Cap

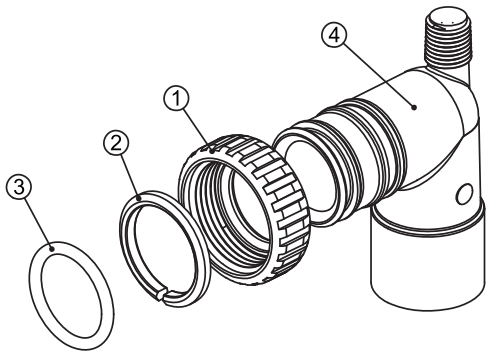
SERVICE WRENCH - CV3193-01

Although no tools are necessary to assemble or disassemble the valve, the *Service Wrench,* (shown in various positions on the valve) is available to aid in assembly or disassembly.

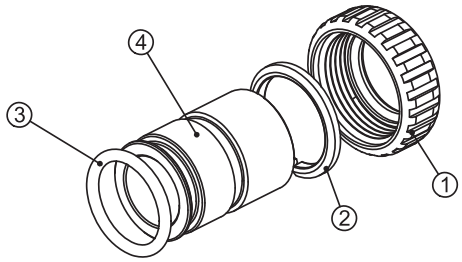
INSTALLATION FITTING ASSEMBLIES:



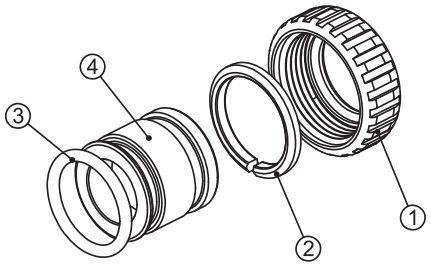
1" PVC MALE NPT ELBOW			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007	1" PVC male NPT elbow assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3149	Fitting	2



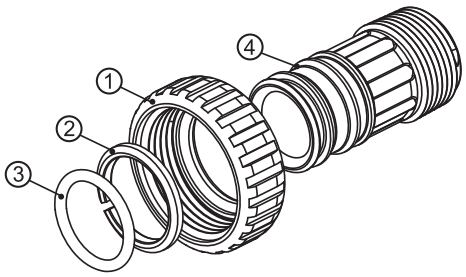
3/4" & 1" PVC SOLVENT ELBOW			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-01	3/4" & 1" PVC solvent elbow assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3189	Fitting	2



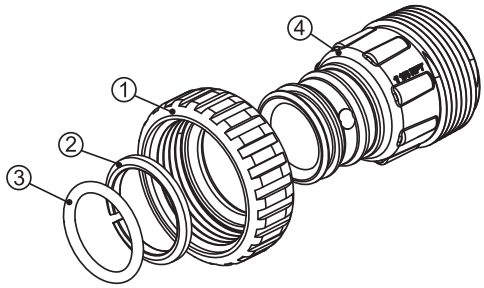
1" BRASS SWEAT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-02	1" brass sweat assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3188	Fitting	2



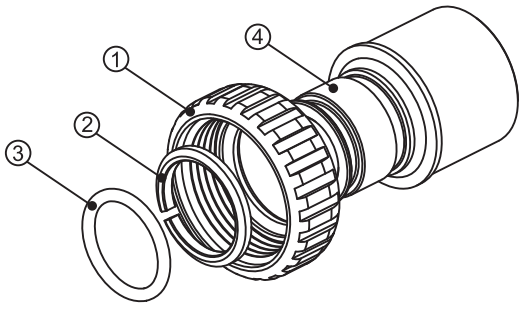
3/4" BRASS SWEAT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-03	3/4" brass sweat assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3188-01	Fitting	2



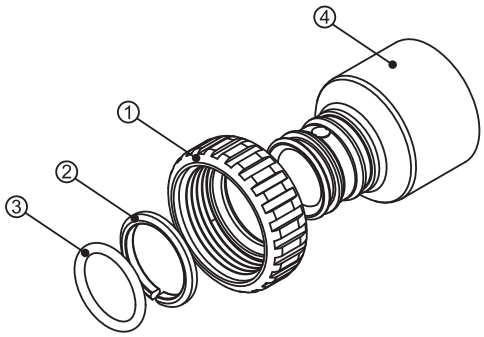
1" PLASTIC MALE NPT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-04	1" plastic male NPT assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3164	Fitting	2



1-1/4" PLASTIC MALE			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-05	1-1/4" plastic male assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3317	Fitting	2



1-1/4" & 1-1/2" BRASS SWEAT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-09	1-1/4 & 1-1/2" brass sweat assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3375	Fitting	2



1-1/4" & 1-1/2" PVC SOLVENT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-07	1-1/4" & 1-1/2" PVC solvent assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3352	Fitting	2

SPECIFICATIONS:

NEUTRALIZER SPECIFICATIONS

MODEL NUMBER	IMBF-1044MAN	IMBF-1054MAN	IMBF-1354MAN	IMAN-1044	IMAN-1054	IMAN-1354
Mineral cu. ft.	CALCITE or MIX 1.0	CALCITE or MIX 1.5	CALCITE or MIX 2.5	CALCITE or MIX 1.0	CALCITE or MIX 1.5	CALCITE or MIX 2.5
Gravel Amount Type	14 lb 1/4 x 1/8 7 lb. #20	14 lb 1/4 x 1/8 7 lb. #20	21 lb1/4 x 1/8 7 lb. #20	14 lb 1/4 x 1/8 7 lb. #20	14 lb 1/4 x 1/8 7 lb. #20	21 lb 1/4 x 1/8 7 lb. #20
Cont. Flow Peak Flow	5.0 8.0	5.0 9.0	6.0 12.0	5.0 8.0	5.0 9.0	6.0 12.0
Backwash Flow GPM	5.3	5.3	7.5	5.3	5.3	7.5
Total Dimensions	10"W x 52"H	10"W x 62"H	13"W x 62"H	10"W x 50"H	10"W x 60"H	13"W x 60"H
Shipping Weight Unit	Mineral 100 lb Unfilled 46 lb	Mineral 150 lb Unfilled 56 lb	Mineral 250 lb Unfilled 65 lb	Mineral 100 lb Unfilled 46 lb	Mineral 150 lb Unfilled 56 lb	Mineral 250 lb Unfilled 65 lb

AIR FILTER SPECIFICATIONS

MODEL NUMBER	IMS-1054	IMS-1248	IMS-1354	IMB-1054	IMB-1248	IMB-1354
Mineral cu. ft.	CATALYTIC CARBON 1.0	CATALYTIC CARBON 1.5	CATALYTIC CARBON 2.0	BIRM 1.0	BIRM 1.5	BIRM 2.0
Gravel Amount Type	14 LB 1/4 x 1/8 7 LB. #20	21 LB 1/4 x 1/8 7 LB. #20	21 LB 1/4 x 1/8 7 LB. #20	14 LB 1/4 x 1/8 7 LB. #20	21LB 1/4 x 1/8 7 LB. #20	21 LB 1/4 x 1/8 7 LB. #20
Cont. Flow Peak Flow	5.0 8.0	6.0 9.0	7.0 10.0	5.0 10.0	6.0 11.0	7.0 18.0
Backwash Flow GPM	5.3	7.5	9.0	5.3	9.0	10.0
Total Dimensions	10"W x 62"H	12"W x 56"H	13"W x 62"H	10"W x 52"H	10"W x 62"H	13"W x 62"H
Shipping Weight	Unit Filled 78 lb	Unit Filled 109 lb	Unit Filled 130 lb	Unit Filled 100 lb	Unit Filled 142 lb	Unit Filled 185 lb

FILTER SPECIFICATIONS

MODEL NUMBER	IMBF-1044	IMBF-1054	IMBF-1354	IMBF-1044MEZ	IMBF-1054MEZ	IMBF-1354MEZ
Mineral cu. ft.	CARBON 1.0	CARBON 1.5	CARBON 2.5	FILTER Z 1.0	FILTER Z 1.5	FILTER Z 2.5
Gravel Amount Type	14 LB 1/4 x 1/8 7 LB. #20	14 LB 1/4 x 1/8 7 LB. #20	21 LB 1/4 x 1/8 7 LB. #20	14 LB 1/4 x 1/8 7 LB. #20	14 LB 1/4 x 1/8 7 LB. #20	21 LB 1/4 x 1/8 7 LB. #20
Cont. Flow Peak Flow	5.0 8.0	5.0 9.0	6.0 12.0	6.0 10.0	7.0 11.0	11.0 18.0
Backwash Flow GPM	5.3	5.3	7.5	7.5	7.5	14.0
Total Dimensions	10"W x 52"H	10"W x 62"H	13"W x 62"H	10"W x 52"H	10"W x 62"H	13"W x 62"H
Shipping Weight	75	90	160	Unit Filled 100 lb	Unit Filled 142 lb	Unit Filled 185 lb

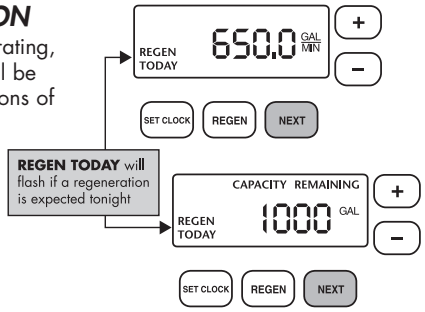
IRON FILTER SPECIFICATIONS

MODEL NUMBER	IMAF-1044MGS	IMAF-1054MGS	IMAF-1354MGS
Mineral cu. ft.	GREENSAND 1.0	GREENSAND 1.5	GREENSAND 2.5
Gravel Amount Type	14 LB 1/4 x 1/8 7 LB. #20	14 LB 1/4 x 1/8 7 LB. #20	21 LB 1/4 x 1/8 7 LB. #20
Cont. Flow Peak Flow	4.0 6.0	4.0 6.0	6.0 9.0
Backwash Flow GPM	5.3	5.3	7.5
Total Dimensions	10"W x 52"H	10"W x 62"H	13"W x 62"H
Shipping Weight Unit	160	190	Mineral 225 lb Unfilled 65 lb

QUICK REFERENCE GUIDE:

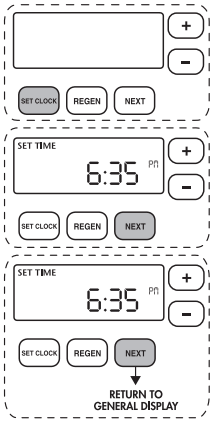
GENERAL OPERATION

When the system is operating, one of three displays will be shown: time of day, gallons of treated water available, or gallons per minute. Pressing ***NEXT*** will toggle between the three choices.



TO SET TIME OF DAY

In the event of a prolonged power outage, time of day flashes, indicating that this needs to be reset. All other information will be stored in memory no matter how long the power outage. Please complete the steps as shown to the right. To access this mode, press ***SET CLOCK.***

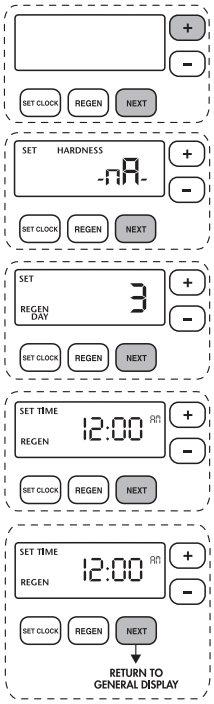


1. Accessed by pressing ***SET CLOCK***
2. Adjust hours with + and − buttons, AM/PM toggles at 12.
3. Press ***NEXT***
4. Adjust minutes with + and − buttons.
5. Press ***NEXT*** to complete and return to normal operation.

ADJUST HARDNESS, DAYS BETWEEN REGENERATION, OR TIME OF REGENERATION

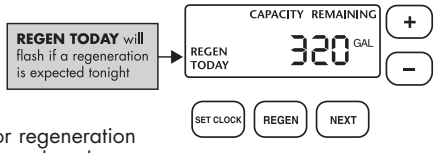
For initial setup or to make adjustments, please complete the steps as shown to the right.

1. Access by pressing ***NEXT*** and + button simultaneously.
2. Hardness display shows "-nA-" when used as a filter.
3. Press ***NEXT***
4. Adjust days between regenerations using + and − buttons.
5. Press ***NEXT***
6. Adjust time of regeneration hour with + and − buttons, AM/PM toggles at 12.
7. Press ***NEXT***
8. Adjust time of regeneration minutes with + and − buttons.
9. Press ***NEXT*** to complete and return to normal operation.



MANUAL REGENERATION

NOTE: If you need to initiate a manual regeneration, either immediately, or the same night at the preprogrammed time for regeneration (typically 12:00 AM), complete the following steps.

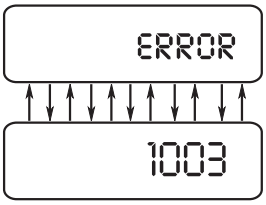


For Immediate Regeneration:
Press and hold ***REGEN*** until valve motor starts (typically 3 seconds).

For Regeneration the same night:
Press and release ***REGEN*** (notice that flashing "REGEN TODAY" appears).

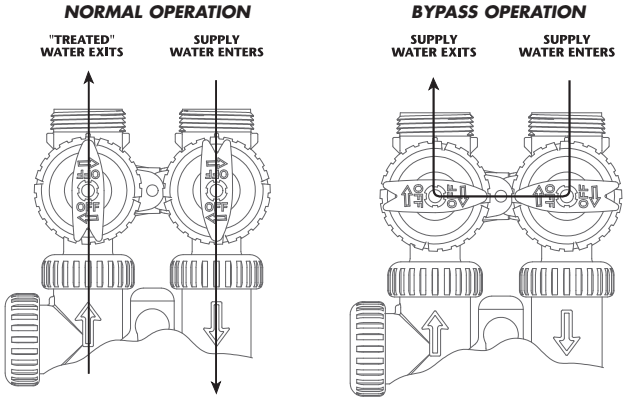
ERROR

If the display toggles between "Error" and an error code (i.e. a number), call a service technician and report the error code.



BYPASS VALVE OPERATION

To shut off water to the system, position arrow handles as shown in the bypass operation diagram below. If your valve doesn't look like the diagram below, contact your service technician for instructions on how to shut off water.



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